In 1911 Swinhoe in Lepidoptera Indica, volume 8, page 260, stated: '*Zephyrus triloka* (sic) Hannyngton, whose type he has kindly allowed us to examine is undoubtedly only a dry form of the female of *Ruralis* (now *Thecla*) *syla* Kollar'. Subsequent authors, following on Swinhoe's determination, have placed *triloka* as a synonym of *syla*, which is a common Himalayan species. Hannyngton died in 1919 and his collection was acquired by Lord Rothschild for the Tring Museum.

In 1954 T. G. Howarth of the British Museum (Natural History) was called upon to name a large collection of Chinese Lycaenidae. For the difficult genus *Thecla* he found it necessary to carry out a detailed examination of all the material available and specimens from Tring were amalgamated with the general collection in London. In addition to the 3 females mentioned by Hannyngton, 2 males were found labelled respectively 'Kumaun Aug. Coll. Hannyngton' and 'C. Kumaun, E. Ramganga Valley, Quanti, 5,000 ft., H. G. Champion: June 1924.' Superficially, as well as in the form of genitalia, *triloka* was found to be a distinct species with no near ally. The upperside of the male resembles *syla*, but on the underside *triloka* is quite distinct, as described by Hannyngton.

I publish this note, with the consent of Mr. Howarth, in order to justify the judgement of my friend F. Hannyngton.

British Museum (Natural History),
London, W. H. EVANS
March 26, 1955.

21. ADAPTIVE COLORATION AND CAMOUFLAGE OF THE COMMON MEMBRACID ('TREE-HOPPER') *OTINOTUS ONERATUS* WALK. (HOMOPTERA: RHYNCHOTA)[1]

The common membracid *Otinotus oneratus* Walk. infests a large number of plants belonging to various natural orders in Orissa, Bengal and Bihar (Behura, 1951; Behura & Sinha, 1951). During June to October and sometimes till early November, the nymphal stages of *O. oneratus* occur in plenty and the feeding and mating activities reach their zenith at this period. The membracid is closely attended by the common ant *Camponotus* (*Tanaemyrmex*) compressus Latr., which relishes its anal excretions.

From late November to the beginning of March, that is, during the winter season till the advent of hot summer weather, the membracids are not usually attended by the ants and the nymphal stages are rarely seen during this period, though the adults persist. The general coloration of the mature form shows cryptic coloration with the twig and the spiny pronotal processes of the membracid as the insect rests on the axils of plants appear like thorns or some spiny projections or some other structures of the host-plants. It is interesting to point out that heightening of cryptic resemblance occurs when the ants are not in attendance, and the dense brown colour of the body, wings and the pronotal processes acquires the distinct pale tawny colour of twigs, drying thorns or other processes of the host-plants.

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[1] The note was presented to the Indian Science Congress, Baroda, 1955 and an abstract appeared in the *Proc.* 42*nd Ind. Sc. Cong.* (3): 291.

Ayyar (1935) in South India observed that the activities of the ant, *C. compressus* were at a minimum during the period from late November to March. The rhythmic activity of the ant, therefore, appeared to have its effect on the seasonal history of its ant cattle *O. oneratus*, as indicated by the change of colour of the membracids with the non-attendance of ants.

In order to determine whether the change of coloration in *O. oneratus* is due to the non-attendance of the ant *C. compressus*, the membracids were isolated from the group where the ants were associated with them, but no remarkable change in the coloration of the membracids was noticed after separation. It would therefore appear, that the change in coloration is cryptic and is not at all dependent on the attendance and non-attendance of the ant *C. compressus*, and the correlation beween colour changes in the membracid and the seasonal history of its attending ant is merely a matter of coincidence. During winter, when the host-plants assume a rugged appearance, the colour of the membracids changes in accordance with the coloration of the host-plants, and incidentally they are not then attended by the ants.

Poulton (1903) in Buckton's monograph of Membracids on 'Suggestions as to the meaning of the shapes and colour of the Membracidæ in the struggle for existence' stated that in the Membracidæ the disguise is chiefly borne by the pronotum alone and the likeness to plant structures is for the purpose of concealment. However, he stated that direct evidence was lacking as to the change of colour in the Membracidæ in accordance with two or more environments. It is interesting that Poulton's remark now finds its support from *O. oneratus*. The coloration of this membracid species is cryptic, and it is a matter of coincidence that the change of colour is so marked when the attending ants are absent.

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